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LLNL-TR-410386

Preserving SSC Design Function Using RCM Principles

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February 5, 2009

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This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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Abstract

Reliability-Centered Maintenance (RCM) can be defined as an approach that employs preventive, predictive, proactive, and reactive maintenance practices and strategies in an integrated manner to increase the probability that a Structure, System, or Component (SSC) will function as designed over its life cycle with optimum maintenance. The goal of RCM is to preserve the SSC intended design function at the lowest cost by developing a maintenance strategy that is supported by sound technical and economic justification. RCM has been used extensively by the aircraft, space, defense, power generation, and manufacturing industries where functional failures of SSCs can have the potential to compromise worker or public safety, cause adverse environmental impact, cause loss of production, and/or result in excessive damage to critical SSCs. This paper provides a framework for performing an RCM analysis in support of DOE Order 430.1A (Life Cycle Asset Management) and DOE Order 420.1B (Facility Safety). The influence of RCM on the various aspects of the maintenance program including the work control process is also discussed.